STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Central Illinois Public Service Company (AmerenCIPS)	:	
	:	01-0620
Application for a Certificate of Public Convenience and Necessity under Section 8-406 of the Illinois Public Utilities Act to construct, operate and maintain a 138kV transmission line in Ford County, Illinois.	:	

INITIAL BRIEF OF THE STAFF OF THE ILLINOIS COMMERCE COMMISSION

Pursuant to 83 Ill. Adm. Code 200.800, the Staff of the Illinois Commerce Commission ("Staff" and "Commission"), by and through its attorneys, hereby files its Initial Brief in the above-captioned proceeding.

I. PROCEDURAL HISTORY

On September 27, 2001, Central Illinois Public Service Company ("AmerenCIPS" or "Company") filed a Petition seeking a Certificate of Public Convenience and Necessity ("Certificate") pursuant to Section 8-406 of the Illinois Public Utilities Act ("Act"), 220 ILCS 5/8-406, which would authorize it to construct, operate and maintain an approximately 17 mile 138 kilovolt ("kV") three-phase, multigrounded, electric transmission line in Ford County, Illinois and to conduct utility business in connection therewith. (Petition at 1-2.)

Pursuant to notice given in accordance with the rules and regulations of the Commission, pre-hearing conferences were held on November 26, 2001, December 19, 2001, and March 14, 2002, and an evidentiary hearing was held on May 29, 2002,

before a duly authorized Administrative Law Judge of the Commission at its offices in Springfield, Illinois. A Petition to Intervene was filed on December 12, 2001, by the 500 Road Group, which was granted at the December 19, 2001, pre-hearing conference. On May 24, 2002, Ameren Energy Company ("AEG") filed a Petition to Intervene and a Motion in Limine seeking to limit the issues in the proceeding. Staff and the 500 Road Group filed Responses to both on May 24, 2002. AEG's Petition to Intervene was granted and its Motion in Limine was denied at the May 29, 2002, hearing.

At the May 29, 2002 hearing, AmerenCIPS appeared by its counsel and presented testimony and exhibits in support of the Petition. Staff also appeared by its counsel and presented testimony and exhibits recommending denial of the Petition. The 500 Road Group appeared by its counsel and presented testimony and exhibits also recommending denial of the Petition. AEG appeared by its counsel and presented no testimony but conducted cross-examination of two witnesses. At the conclusion of the hearing on May 29, 2002, the record was marked "Heard and Taken."

AmerenCIPS presented the direct, rebuttal and surrebuttal testimony of Kiritkumar S. Shah, Supervising Engineer of the Transmission & Interconnections Group in the Electrical Engineering & Transmission Planning Department for Ameren Services Company ("Ameren Services"); the direct and surrebuttal testimony of David W. DeWeese, Supervising Engineer of Transmission Line Design for Ameren Services; and the direct testimony of Ronald D. Laupp, a Real Estate Supervisor for Ameren Services. Staff presented the direct testimony of Phil A. Hardas, a Financial Analyst in the Finance Department of the Commission's Financial Analysis Division, and the direct and rebuttal testimony of Bruce A. Larson, P.E., a Senior Engineer in the Electric Section of

the Commission's Energy Division. The 500 Road Group presented the direct and rebuttal testimony of Brian Ross, a Principal with Biko Associates, Inc.

II. AMERENCIPS' PETITION SHOULD BE DENIED

A. Applicable Law

Section 8-406 of the Act requires that a utility demonstrate three criteria before being granted a Certificate. The three criteria are:

> (1) that the proposed construction is necessary to provide adequate, reliable, and efficient service to its customers and is the least-cost means of satisfying the service needs of its customers;
>
> (2) that the utility is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision thereof; and
>
> (3) that the utility is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers.

220 ILCS 5/8-406(b)(1)–(3).

Staff evaluated the Company's Petition, testimony and data request responses with respect to the three criteria and determined that while the Company had demonstrated that it met the second and third criteria, it had failed to meet its burden with respect to the first criterion. A discussion of Staff's analysis follows.

B. Ability to Finance the Proposed Construction

Staff witness Phil A. Hardas presented his evaluation of the financial implications of the proposed construction under Section 8-406(b)(3) of the Act. (ICC Staff Exhibit 1.0.) Based on his review of AmerenCIPS' Petition and the supporting documents, he opined that AmerenCIPS is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers. He averred that

the total estimated cost for the entire Ford County project is approximately $5.655 million. (Id. at 2.)

Staff witness Hardas also reviewed the two alternate routes proposed by the Company. Since the first alternate route would cost less than the primary route, it was not necessary to analyze its cost. The second alternate route would cost approximately 50% more than the primary route, totaling approximately $8.4825 million. (Id. at 2-3.)

He also stated that according to AmerenCIPS' 2000 FERC Form No. 1, net utility plant for electric operations at December 31, 2000, was $668,425,560. Total utility revenue from electric operations for the twelve months ended December 31, 2000, was $696,194,946. The total estimated cost of the entire Ford County project using the primary route is approximately $5.655 million, or 0.8460% of net utility plant for electric operations and 0.8123% of total utility revenue for electric operations. The total estimated cost of the entire Ford County project using the second alternate route is approximately $8.4825 million, or 1.2690% of net utility plant for electric operations and 1.2184% of total utility revenue for electric operations. (Id. at 3.)

Staff witness Hardas concluded that since the estimated cost of the proposed construction under the primary or either alternate route is quite small in comparison to AmerenCIPS' net utility plant and total utility revenue for electric operations, it is reasonable to conclude that AmerenCIPS is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers. In his judgment, the proposed transaction meets the requirements of Section 8-406(b)(3) of the Act. He would recommend that the Commission find that AmerenCIPS is capable of

financing the proposed construction without significant adverse financial consequences for the utility or its customers. (Id. at 3-4.)

C. Ability to Manage and Supervise the Construction Process

Staff witness Bruce A. Larson, P.E., addressed whether AmerenCIPS had met its burden with respect to the second criterion in Section 8-406(b). He concluded that if the line is built, AmerenCIPS can efficiently manage and supervise the construction and ensure adequate and efficient construction and supervision thereof. (ICC Staff Exhibit 2.0 at 9.)

D. Adequate, Reliable and Efficient Service and Least-Cost Means

1. Direct Testimony

The focus of Staff witness Larson's testimony was whether the proposed 138 kV line is necessary to provide adequate, reliable, and efficient service, and is the least-cost means to satisfy the service needs of AmerenCIPS' customers. His conclusion was that he could not support the construction of the proposed transmission line. However, if the construction is approved, he believes that AmerenCIPS' proposed route is acceptable. (Id. at 9-10.)

Mr. Larson explained that there are three 138 kV lines that connect at the Gibson City substation. One 138 kV line goes to AEG's Gibson City generating plant. The second 138 kV line goes to AmerenCIPS' substation at Paxton. This line is owned by AmerenCIPS and has a summer emergency rating of 168 megavolt amperes ("MVA"). The third line goes to Illinois Power Company's ("Illinois Power") Brokaw substation. This line is owned by Illinois Power and has a summer emergency rating of 164 MVA. (Id. at 3.)

The Gibson City substation also has two 138 kV to 69 kV transformers and two 69 kV lines that exit the substation. These lines go to another Gibson City substation and north to Fairbury where the voltage is further reduced for distribution to customers. The 2002 summer peak load on the 69 kV transformers is 30 megawatts ("MW"). (Id.)

The Gibson City power plant consists of two natural gas-fired combustion turbine "peaker" units. They are called peaker units because they normally operate only on hot days in the summer, when AmerenCIPS' load "peaks" from customer air-conditioning usage. Because the cost of natural gas fuel is higher than the cost of coal fuel, the natural gas units are used last. (Id.)

According to information from AmerenCIPS in response to Data Request ENG 1.0, the plant had a capacity factor of 2.1% in 2000. The capacity factor is the ratio of a plant's actual output divided by its maximum possible output and can be considered a proxy for the amount of time a unit is used. The capacity factor in 2001 was 4.4% through November. Thus, based on the capacity factor information, the Gibson City plant runs infrequently. (Id. at 3-4.)

According to an AmerenCIPS memorandum dated October 29, 1999 (ICC Staff Exhibit 2.1), AEG decided to increase the generating capacity of the power plant from 206 MW to 236 MW, an increase of 30 MW. This 30 MW generating capacity increase would cause an overload on either of the two existing 138 kV lines serving the Gibson City substation only in the event of an outage of either line. In other words, neither existing line is capable of handling the entire output of the plant. The Gibson City power plant was capable of overloading a single 138 kV line by 10 MW, even without a 30 MW

increase in generating capacity. With the 30 MW increase in generating capacity, the power plant will be capable of overloading a single 138 kV line by 40 MW. (Id. at 4.)

ICC Staff Exhibit 2.2 is an internal AmerenCIPS memorandum dated October 8. 1998, that discusses the siting of new generating units in Illinois. This memorandum indicates a need for additional support in AmerenCIPS' Northern Prairie and Heritage regions. According to the memorandum, the necessary support can be provided by either new transmission into the area or by location of generation in the area. However, it is Staff witness Larson's opinion that the location of the power plant at Gibson City provides all the support necessary. (Id. at 4-5.)

It is Staff's position that the Gibson City power plant, even without the additional 30 MW, completely solves the problem of south-to-north power flows that is discussed in the last paragraph of the first page and continued on the second page of the October 8, 1998, AmerenCIPS memorandum. The Gibson City power plant's existing generating capacity, without the 30 MW addition, is sufficient to serve the entire load in AmerenCIPS' Northern Prairie region. The 10 MW power plant output limitation imposed by a single contingency transmission line outage does not prevent the power plant from serving the entire load in the region. (Id. at 5.)

ICC Staff Exhibit 2.3 is Staff witness Larson's estimate of the Northern Prairie load. Substations serving the area include Gibson City, Paxton, Watseka, Hoopston, Gilman and Rantoul. ICC Staff Exhibit 2.3 shows that the combined load in the Northern Prairie region is 138.2 MW for the summer of 2002. AmerenCIPS supplied these figures to Staff in a recent Section 8-406 proceeding for a Certificate for an electric combustion turbine generator in Madison County, Illinois (Docket No. 01-0516), pur-

suant to a request for power flow data. The generating capacity of the Gibson City power plant, when limited by an outage of a single line, is the sum of a single 138 kV line's summer emergency rating plus the load on the 69 kV lines that leave the substation. This amount is 164 MW at 138 kV and 30 MW at 69 kV for a total of 194 MW. This is 56 MW higher than the load in the region. (Id. at 5-6.)

Staff believes that AmerenCIPS is able to provide reliable service in its Northern Prairie region if the Gibson City power plants are unavailable for some reason. First, the Northern Prairie region only experienced problems during a single contingency outage of key north-south transmission lines during high load periods. Planning for single contingencies, or the outage of only one element at a time is standard in the industry. The outage of one transmission line and one generating unit at Gibson City would be a double contingency. In Staff's opinion, AmerenCIPS will still be able to provide reliable service for that double contingency. Staff witness Larson believes this is correct because the output of one generating unit at Gibson City can supply most of the load in the Northern Prairie region. Finally, even if this situation could not serve the load reliably, the addition of the proposed transmission would not help. That is because, absent the Gibson City generating plant, the proposed line is not an additional source of power to the Northern Prairie region and would not reduce overloads of south-to-north power flows. (Id. at 6.)

The outage of both units at Gibson City and one transmission line would be a triple contingency. This would be an extremely rare occurrence. Even if natural gas somehow became unavailable, the Gibson City plant has oil available as a backup fuel. As with the double contingency discussed above, the proposed transmission line would

not provide any support in this triple contingency case either. Again, this occurs because the proposed line, in and of itself, is not a source of power for the region. (Id. at 6-7.)

Based on the information provided in response to Staff Data Request ENG 4.1, AmerenCIPS rarely experiences extended outages of either existing 138 kV line to the Gibson City substation. While AmerenCIPS' records are incomplete in this area, estimated unscheduled outages over the last five years include two outages of the line to Paxton and five outages of the line to Brokaw. All of the outages were less than one minute. Furthermore, AmerenCIPS' response acknowledges that none of those momentary outages would have required interruption or curtailment of generation at the Gibson City plant. (Id. at 7.)

Therefore, Staff believes it is very unlikely that the proposed transmission line will increase service reliability in AmerenCIPS' Northern Prairie region. The proposed line will improve reliability only in the unlikely event that the total output of the plant is needed at the same time as one of the two existing transmission lines is out of service. That event is very unlikely. Nor is the proposed line a cost effective capacity addition. At a cost of over $5 million with only unlikely benefits to customers, Staff maintains the cost is unwarranted. AmerenCIPS claims it reviewed the economics of this line, but did not keep the analysis. (Id. at 7-8.)

In concluding his direct testimony, Staff witness Larson admits that the new line will provide very secure output for the Gibson City plant. With the third line, the plant is not restricted when either of the two existing 138 kV lines is out of service. However, Mr. Larson concluded that he could not support the need for the proposed transmission

line based on AmerenCIPS' argument that the line will improve reliability in the Northern Prairie region. (Id. at 8.)

2. Rebuttal Testimony

Instead of addressing Staff's direct testimony concerns, AmerenCIPS simply changed its stated reason for requesting the new transmission line in Mr. Shah's rebuttal testimony. In a surprise turnaround, Mr. Shah's rebuttal testimony states that the real reason the line is needed is in order to meet AmerenCIPS' long-standing engineering and planning criteria. Mr. Shah's rebuttal testimony raised additional questions for Staff about how AmerenCIPS decided it needed the new transmission line. AmerenCIPS witness Shah neither provides a copy of the engineering and planning criteria nor explains how AmerenCIPS applied judgment in deciding not to comply with the criteria in December 1999 when it first learned of a 10 MW generation limitation at the Gibson City plant. (ICC Staff Exhibit 3.0 at 1-2.)

AmerenCIPS' Petition in the instant proceeding states the following with respect to the need for the line:

> In order to provide necessary transmission line capacity to transmit the full output of generation from an AmerenCIPS' Network Resource located in Gibson City, Illinois during a single contingency event, AmerenCIPS proposes to construct, operate and maintain an approximately 17 mile, 138 kV, three-phase, multigrounded, transmission line, and to conduct a utility business in connection therewith. Petitioner's analysis justifying the need for the proposed line is more fully set forth in the Direct Testimony of Kiritkumar S. Shah, which is attached hereto as AmerenCIPS Exhibit No. 1.0 (Petition at 1-2.)

In support of the Petition, Mr. Shah's direct testimony states:

> The proposed line is needed to provide adequate outlet transmission capacity for one of AmerenCIPS designated Network Resources, during a transmission facility outage condition. The additional transmission capacity will enhance reliability of service to Ameren customers,

> particularly those in the Ford County area. (AmerenCIPS Exhibit 1.0 Revised at 4.)

In rebuttal, Mr. Shah asserted the reason for requesting the proposed transmission line:

> It is my opinion that the failure of the ICC to grant a Certificate of Convenience and Necessity in this proceeding for building the proposed 17 mile 138 kV electric transmission line in Ford County, Illinois from AmerenCIPS' Gibson City South Substation to AmerenCIPS' Paxton East Substation would require AmerenCIPS to violate its long-standing engineering and planning criteria and could have an adverse effect on the overall reliability of the interconnected transmission system, including Illinois. It could also have a adverse effect on the competitive generation market in Illinois. (AmerenCIPS Exhibit 5.0 at 3.)

Mr. Shah's rebuttal position appears to be that AmerenCIPS cannot provide adequate and reliable service to the Gibson City power plant without upgrading its transmission system and that the proposed new transmission line is the best way to make that upgrade.

While the "long-standing engineering and planning criteria" to which Mr. Shah refers were never provided by AmerenCIPS, Staff witness Larson provided the North American Electric Reliability Council ("NERC") rules as Attachment A to his rebuttal testimony. (ICC Staff Exhibit 3.0, Attachment A.) The NERC planning criterion that Mr. Shah referred to is shown as Category B on Table I of the Transmission System standard. Transmission planners consider the NERC rules as decision rules for planning additions to the transmission system. Planners decide to take action so that the rules are not violated. Category B requires that for an event resulting in the loss of a single

element,[1] there shall be no loss of demand or curtailed firm transfers. Curtailment of the output of AEG's Gibson City plant qualifies as a curtailed firm transfer. (Id. at 4-5.)

With respect to these "new reasons" for the proposed line that Mr. Shah's rebuttal testimony provides, namely, reliability of the interconnected transmission system and adverse effect on the competitive generation market in Illinois, these are more the result, or outcome, of not following the NERC rules. While there is no set of documented industry standards that support these "new reasons," there are NERC rules. (Id. at 5.)

Even before AEG decided to upgrade the generation plant by 30 MW from 206 to 236 MW, the transmission system would be overloaded by about 10 MW during a first contingency. When asked in Staff Data Request ENG 6.4 why a 10 MW overload does not violate the first contingency criterion while a 40 MW overload does, AmerenCIPS simply states that it strictly follows the single contingency criterion. (ICC Staff Exhibit 3.0, Attachment B.) That statement suggests that AmerenCIPS would have proposed to build this line, or some other upgrade, for the previously existing 10 MW generation limitation. However, certain memoranda reveal that AmerenCIPS has known of the 10 MW limitation since it began planning for the Gibson City plant in 1999 (*See* ICC Staff Exhibit 2.1), and has taken no action until the instant proceeding. AmerenCIPS has never satisfactorily explained this discrepancy to Staff and Staff is unable to explain it to the Commission. (ICC Staff Exhibit 3.0 at 6.) In fact, during cross-examination Mr. Shah admitted that in 1999 AmerenCIPS concluded that building the new transmission line was not economically justified. (Tr. at 31.)

[1]Also referred to as single contingency or first contingency.

Clearly, a utility must apply engineering judgment when applying any engineering criterion. AmerenCIPS should have considered the size of the generation limitation, the cost to remove the generation limitation, and the probability the generation limitation would actually occur when applying its first contingency transmission planning criterion. It appears to Staff that this is exactly what AmerenCIPS did until it was told by AEG to upgrade its transmission system. (ICC Staff Exhibit 3.0 at 6.)

Staff witness Larson's direct testimony established that the probability of a forced outage of one of the existing lines, the first contingency, is very low. But this simple probability is not the correct measure for the first contingency criterion. The correct probability is the joint probability that the single contingency occurs at the same time as AEG requires the full output of the Gibson City plant. This joint probability is extremely low because it combines two improbable events. This event is very close to a Category C NERC event, which is the outage of two or more transmission elements. (Id. at 7.)

The size of the limitation is also important. A five million dollar upgrade to remove, for example, a 100 MW limitation, should be considered differently than a five million dollar upgrade to remove a one MW limitation. This example also demonstrates the importance of cost in the overall decision making process. (Id.)

Although Staff witness Larson continued to recommend that the Commission not grant AmerenCIPS a Certificate in this proceeding, he suggested in the conclusion of his rebuttal testimony that he might be otherwise convinced if AmerenCIPS could fully explain its decision making process. He requested an explanation of why it found a 10 MW limitation tolerable and decided not to do anything to eliminate that limitation and why it has come to a different conclusion about the latest 40 MW limitation. He

requested that AmerenCIPS answer the following questions and provide the following information:

1. Provide a copy of the engineering and planning criteria that Mr. Shah refers to in his rebuttal testimony.

2. Explain whether the engineering and planning criteria that apply to the 10 and 40 MW limitations are the same or different.

3. Explain any factors that affected AmerenCIPS' decisions to ignore the 10 MW limitation, but eliminate the 40 MW limitation.

4. Explain how the size increase of the limitation from 10 to 40 MW changed the outcome of whatever analyses AmerenCIPS performed and provide a copy of those analyses.

5. Explain the outcome that AmerenCIPS predicts if it fails to build the new 138 kV line.

6. Estimate the probability that the 40 MW limitation will occur at the same time that AEG desires to operate its plant at full output in the future.

7. Estimate the probable duration of any forced plant output limitations that might occur over one year, five years, and ten years as a result of not building the new line.

8. Explain how the probable amount of AEG's resulting lost revenue from forced plant output limitations compares to the $5 million dollar cost of the new line.

(Id. at 8-9.) AmerenCIPS failed to provide Staff with this information in its surrebuttal testimony.

E. AmerenCIPS' Proposed Route

Staff witness Larson inspected AmerenCIPS' proposed primary route and two alternative routes. On February 14, 2002, he and Ron Linkenback, Chief of the Electric Section, Engineering Department, Energy Division, met with David DeWeese and Tracy Dencker of Ameren Services. AmerenCIPS' primary route follows roads and highways whenever possible. This has the advantage of providing easy access to build and

repair the line. In addition, much of the required right-of-way is highway related. However, it is not the cheapest alternative. The costs are shown on AmerenCIPS Exhibit 2.1. The proposed route costs approximately $695,000 (12%) more than the first alternative. AmerenCIPS' primary route cost $5.655 million. (ICC Staff Exhibit 2.0 at 9.)

The first alternative route follows an abandoned railroad right-of-way. Much of the elevated roadbed has been removed and the land reverted to agricultural use. In addition, the railroad right-of-way passes near several grain elevators that will be difficult to traverse. (Id.)

The second alternative is to build a double circuit 138 kV line on the existing transmission line right-of-way. This alternative costs $7.5 million, which is $2.5 million (50%) more than the proposed line. This option has the least incremental adverse impact, but the highest cost. In addition, it would expose the area to a long outage of the existing line during construction. (Id. at 10.)

Based on cost and accessibility, Staff witness Larson agrees with the proposed primary route chosen by AmerenCIPS. (Id.)

III. CONCLUSION

For these reasons, Staff of the Illinois Commerce Commission respectfully requests that the Commission deny AmerenCIPS' September 27, 2002, Petition seeking a Certificate of Public Convenience and Necessity pursuant to Section 8-406 of the Illinois Public Utilities Act which would authorize it to construct, operate and maintain an approximately 17 mile 138 kilovolt three-phase, multigrounded, electric transmission line in Ford County, Illinois and to conduct utility business in connection therewith.

Respectfully submitted,

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